ASSISTANT SECRETARY OF DEFENSE

WASHINGTON, D.C. 20301-3040

COMMAND, CONTROL, COMMUNICATIONS AND INTELLIGENCE

APR 15 1994

MEMORANDUM FOR SECRETARIES OF THE MILITARY DEPARTMENTS
VICE CHAIRMAN, JCS
UNDER SECRETARIES OF DEFENSE
COMPTROLLER OF THE DEPARTMENT OF DEFENSE
ASSISTANT SECRETARY OF DEFENSE (C3I)
ASSISTANT SECRETARY OF DEFENSE (HEALTH AFFAIRS)
ASSISTANT SECRETARY OF DEFENSE (RESERVE AFFAIRS)
GENERAL COUNSEL OF THE DEPARTMENT OF DEFENSE
DEPUTY UNDER SECRETARY OF DEFENSE (ACQUISITION REFORM)
DEPUTY UNDER SECRETARY OF DEFENSE (ENVIRONMENTAL SECURITY)
DEPUTY UNDER SECRETARY OF DEFENSE (LOGISTICS)
DIRECTOR, J-6

SUBJECT: Corporate Information Management Strategic Plan and Enterprise Integration Implementing Strategy

The attached package contains both of the subject documents for your review and comment. At this time I would like to focus comments on major issues or problems that need to be resolved in these documents. After receiving and resolving your comments, the strategic plan and implementing strategy will be issued in final.

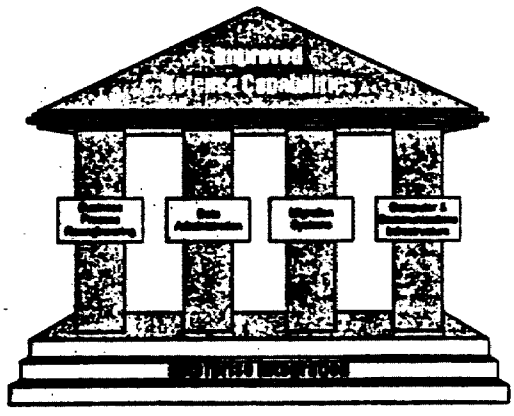
Please provide your comments to this office within two weeks of the date of this memorandum. Mr. William Leary is the point of contact for this action and he can be reached at 604-1490.

Emmett Paige, Jr.

Attachments

CORPORATE INFORMATION MANAGEMENT FOR THE 21ST CENTURY

- A DoD Strategic Plan -



ENTERPRISE INTEGRATION

- Implementing Strategy -

April 1994
Assistant Secretary of Defense,
Command, Control, Communications, and Intelligence
U.S. Department of Defense

DoD CORPORATE INFORMATION MANAGEMENT STRATEGIC PLAN
&
ENTERPRISE INTEGRATION IMPLEMENTING STRATEGY

PREFACE

The Department of Defense faces a period of profound change. The end of the cold war, a new agenda for the nation, and the revolution in information technology, challenge old assumptions and "ways of doing business" as never before. The Department must remain ready to protect the country from existing and emerging external threats while also responding to new national priorities. While we cannot foresee all the changes that will occur in defense, we can act now to shape the future, rather than be shaped by it.

Corporate Information Management is a strategic management initiative, embodied in policies and programs, implementation guidance, and supporting resources, established to help functional managers change processes, data resources, and information systems so they become far more effective and efficient. Corporate Information Management goals and objectives are founded on strategic direction of the senior defense leadership. The Corporate Information Management Strategic Plan provides top level guidance for all information management activities in the Department. It includes six goals that address the migration of information systems, standardization and sharing of data, business process reengineering, an infrastructure of computing and communications capabilities, functional and technical integration, and management of the Corporate Information Management initiative at all levels of the Department. Functional managers are responsible for planning and executing process, data, and system improvements and innovations in their functional area.

To facilitate the implementation of Corporate Information Management goals, the Department of Defense adopted an Enterprise Integration Implementing Strategy to be supported by the Defense Information Systems Agency. This Implementing Strategy identifies specific programs and initiatives necessary to support the accomplishment of the goals established in the Corporate Information Management strategic plan in an integrated manner. It also provides assistance to functional and technical managers in identifying cross-functional impacts and Department-wide solutions for their information systems. The Implementing Strategy describes the Enterprise Integration concept and identifies critical success factors, implementing processes, and target measures of success for achieving the Corporate Information Management goals.

These two documents provide a "blueprint" for managing and shaping change across the Department of Defense. They describe the management concepts and structure that are needed to enable the Department to realize the greatest benefits in mission capability, efficiency and economy during this period of significant change.

CORPORATE INFORMATION MANAGEMENT FOR THE 21st CENTURY

A DoD Strategic Plan

April 1994
Assistant Secretary of Defense, Command,
Control, Communications, and Intelligence
U.S. Department of Defense

INTRODUCTION

The DoD faces a period of profound change. The end of the cold war, a new agenda for the nation, and the revolution in information technology, challenge old assumptions and "ways of doing business" as never before. While we cannot foresee all the changes that will occur in defense, we can act now to shape the future, rather than be shaped by it. *DOD must remain ready to protect the country from existing and emerging external threats while also responding to new national priorities.*

DoD is evolving from a cold war posture to a smaller, more mobile and flexible force and infrastructure capable of projecting power anywhere in the world at a moments notice. The Department is positioning itself to engage in a much broader spectrum of missions, ranging from deterrence and regional conflict to peacekeeping and humanitarian assistance. In the new global and interdependent world, economic and environmental security, and the enlargement of democracy have become national concerns.

A new agenda has been established for the nation. Our industries must once again become world leaders in quality, productivity, and value. They must create more and better jobs for Americans. Our education must prepare our children for the 21st century workplace so we can continue to be competitive in the world market. Our infrastructure must be sustained and modernized. In order to achieve these national goals, our Government must be reinvented so it serves the American people. DoD is a leader in the effort to renew, reinvigorate, and improve Government.

The world is in the middle of a true revolution in how work is performed, how organizations are managed, and how people are made more productive. This revolution - a new "paradigm" - results from the ability to manage information through technology. The old organization structures of the past are rapidly giving way to "horizontal" enterprises that focus core competencies across functional lines on mission-results. In essence, the availability of accurate information, where and when it is needed, leverages human knowledge and innovation. It gives the warfighting commander an integrated picture of the battlespace, so he/she can control the pace and outcome of battle. It gives the manager critical insight into current performance and best practice, so processes can be eliminated, improved and reengineered. It gives line workers control over machines and technologies that increase their productivity manyfold. The challenge is to harness this "information revolution" to meet the defense goals for the 21st century.

Corporate Information Management (CIM) is a strategic management initiative, embodied in policies and programs, implementation guidance, and supporting resources, to help functional managers guide and implement changes to processes, data, and systems across the DoD.

This CIM Strategic Plan identifies the goals for managing change, systematically, and achieving the shared vision for defense. **When successfully implemented, this "blueprint for the future" will enable the Department of Defense to bring all national capabilities to bear on each assigned mission to ensure the security of the nation and meet the expectations of the American people.**

VISION

The following paragraphs summarize a likely future vision for the DoD at the end of this decade and the beginning of the next.

The United States faces new threats and opportunities abroad. U.S. forces are engaged both multilaterally and unilaterally, in a wide spectrum of assigned missions, ranging from peacekeeping and humanitarian assistance to resolution of multi-regional conflicts.

In addition to its traditional military missions, the Department is undertaking activities to strengthen democracy, promote economic security, prevent the proliferation of weapons of mass destruction, and assist other elements of the U.S. Government in achieving national priorities through information interoperability.

The Department has been downsized from the late 1980's posture, yet maintains technological superiority through a combination of better intelligence, sophisticated command and control, smart weapons, highly motivated and trained personnel and the application of information management to all DoD activities.

Flexible information connectivity among U.S. Forces, including both communications and data, is accepted as a critical force asset, available to support world-wide mobility and operations.

Recognition of the importance of information integration and exchange in the battlefield has resulted in significantly improved joint service operations and multinational operations with allies.

The military industrial base has been fully integrated with the commercial base, so the Department can rapidly obtain and use standard commercial products and services at lower cost.

The sustaining base has been integrated seamlessly with the Theater to deliver the right mix of assets and capabilities when and where they are needed for the Combatant Commander to achieve the assigned mission.

All Department functions and organizations have been reengineered, improved and integrated, from an enterprise-wide perspective, and are now being supported by modernized, standards-based open information systems.

Throughout the Department, information is viewed as a strategic asset used to continually increase the effectiveness of military operations and support activities through improved management processes, technology exploitation, economies and greater responsiveness.

INFORMATION MANAGEMENT AS A STRATEGY FOR CHANGE

With every dimension of DoD operations undergoing change, including changes in the threat, changes in missions and reductions in resources, it is clear that the DoD must change the processes it uses to manage and operate functions or activities throughout the Department. Today, many of these functions and processes have been established uniquely by service. The processes themselves are implemented through an information system. That information system is often a stand-alone system, utilizing non-standard data and with incompatible interfaces to related information systems. Corporate Information Management is a strategic initiative to correct these problems by focusing on the process change, data, information systems, and information technology from a Defense Enterprise-wide perspective.

The elements effected by Corporate Information Management are shown in the model depicted in Figure 1 on the following page. Applying this model and institutionalizing Corporate-wide management of these activities are central strategies in meeting the vision statements. This model is applied to each functional area and provides the basis for linking together policy, business methods, performance measures, processes, data, information systems, and the computing and communications infrastructure. Culture, organizations, and people are the foundation upon which change must be planned and implemented.

In the Defense Department, "stove-piped" processes and technical systems have developed which preclude or limit data sharing and interoperability across functional boundaries. To focus the implementation of the CIM goals, an Enterprise Integration (EI) effort has been initiated in the Defense Information Systems Agency (DISA). This initiative develops and maintains an EI Implementing Strategy that addresses cross-functional integration to improve end-to-end processes and information flows.

Both the CIM and EI initiatives are in consonance with current private sector practice and with evolving management theories on process change and information management.

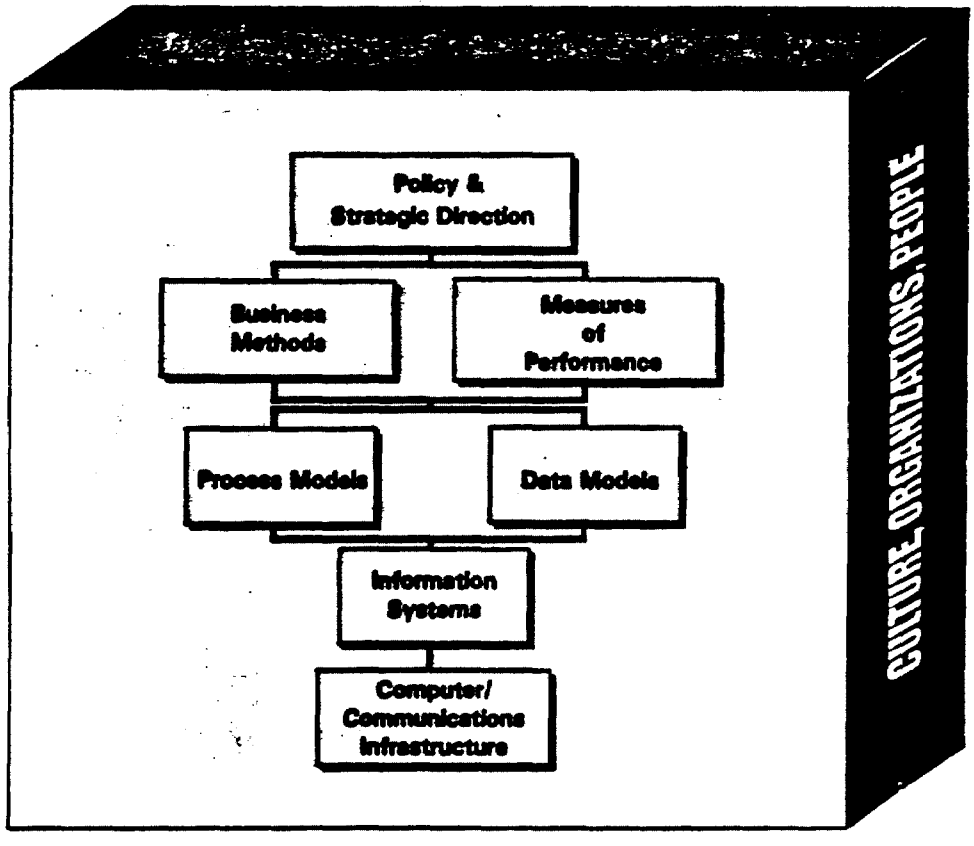


FIGURE 1. CIM MODEL

OVERARCHING CIM GOAL

Enable the commanders of military forces and the managers of support activities to achieve the highest effectiveness, agility and efficiency in their operations through the effective use of information.

The management structure of CIM has four "pillars" that support improved Defense capabilities: common information systems; shared, standard data; reengineered processes; and a computer and communications infrastructure. Enterprise integration provides the implementing processes and coordination of actions needed to put these pillars in place across the DoD, and to link functions, data, and systems horizontally to achieve cross-functional synergies. Figure 2 shows the elements and management framework for achieving CIM goals and objectives.

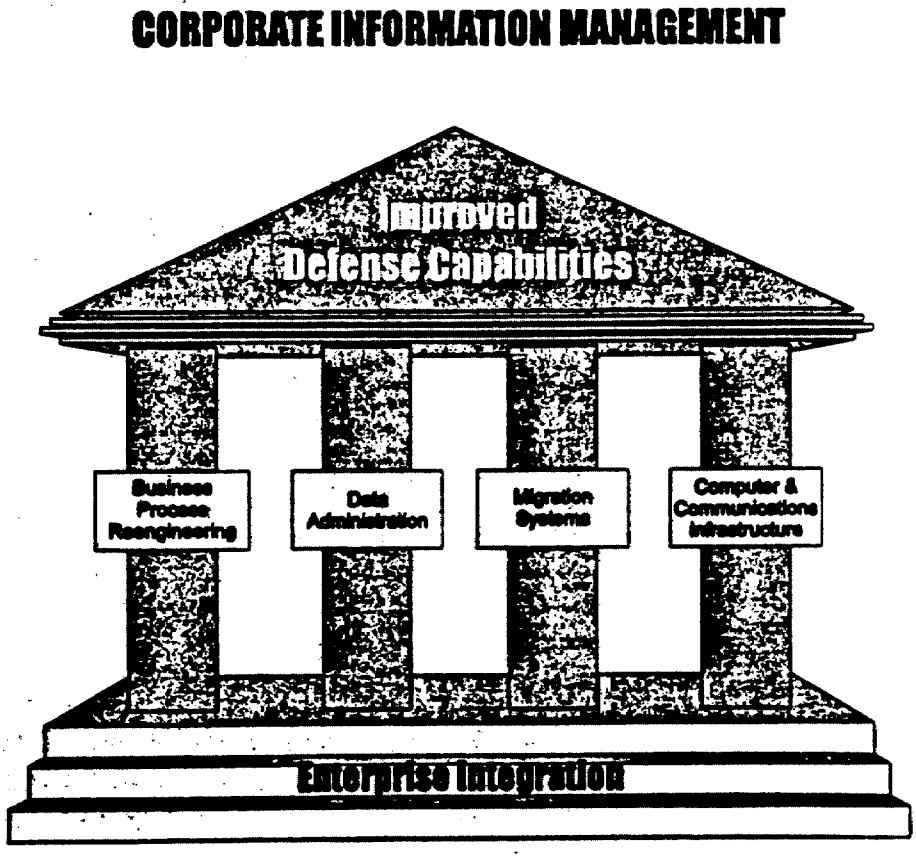


FIGURE 2. · THE CIM MANAGEMENT FRAMEWORK

CIM GOALS

There are six broad goals for CIM. These six goals represent the framework for organizing the major programs and projects in the CIM initiative. The goals are summarized below and further explained on the following pages.

1. **Minimize duplication and enhance DoD's information systems.**

2. **Tie DoD together through the use of common, shared data.**

3. **"Reinvent" and Reengineer DoD operations.**

4. **Implement a flexible, world-wide computer and communications infrastructure.**

5. **Apply Corporate Information Management to integrate Defense Enterprise-wide operations.**

6. **Establish CIM policies and management structure.**

GOAL # 1

Minimize duplication and enhance DoD's information systems.

Objective: Eliminate unnecessary, duplicate systems and migrate toward a common baseline of information systems.

Objective: Implement enhanced information systems that incorporate reengineering results as well as standards based technology.

To meet these objectives we will:

1. Select a minimal set of standard migration systems and implement them to achieve an initial migration baseline.

2. Implement those enhancements to migration systems that can be accommodated within the initial schedule.

3. Plan for and implement enhancements beyond the initial migration baseline to support reengineered processes and achieve open systems architectural standards.

4. Guide the impacts of information system migration on processes, human and financial assets, organizations, and culture.

GOAL # 2

Tie DoD together through the use of common, shared data.

Objective: Derive standard definitions of data, on an aggressive schedule.

Objective: Establish strong management of data quality, including data availability, integrity, accuracy, and security.

To meet these objectives we will:

1. Establish policies and programs to ensure that requirements for end-to-end data availability, integrity/quality, and security are met.

2. Establish programs to ensure compliance with data policies and programs.

3. Develop standard definitions of data through the application of a DoD data model and functional data models, utilizing a central data dictionary.

4. Aggressively pursue opportunities to share data and establish shared data bases within the DoD, with other government agencies, and with allies.

5. Implement a Data Administration Program which includes procedures for standardizing data, promulgating and enforcing use of standard data elements, and oversight reviews of Service/Agency programs.

Establish compliance program to ensure functions, processes + info systems use standard data for sharing purposes —

GOAL # 3

"Reinvent" and Reengineer DoD Operations.

Objective: Aggressively pursue process changes in DoD operations that will yield improved efficiency and effectiveness.

Objective: Implement reengineering on a sustaining basis so that it is responsive to the guidance and priorities of the Department's leadership.

To meet these objectives we will:

1. Institutionalize business process reengineering across the DoD.
2. Perform reengineering activities within and across functional areas.
3. Provide DoD top management the means to provide guidance on reengineering priorities.
4. Provide the necessary tools, training and support to perform reengineering.
5. Develop, maintain, and apply the DoD Enterprise Model.
6. Facilitate changes to culture, people, and organizations to achieve a more effective DoD Enterprise.

GOAL # 4

Implement a flexible, efficient world-wide computer and communications infrastructure.

Objective: Implement a computer and communications infrastructure that is transparent to the applications software residing on it.

Objective: Establish technical policies and a standards based open system architecture to guide implementation of the infrastructure.

To meet these objectives we will:

1. Apply policies and programs to guide infrastructure development and modernization through standards based architectures.

2. Strengthen the management of information technology assets in conformance with architectural and configuration management principles.

3. Ensure that the computing and communications infrastructure can evolve to meet the processing and support requirements of DoD information systems.

4. Benchmark the infrastructure against best commercial practices and performance measures.

5. Improve software practices through software process management, software metrics, software engineering environments, and software reuse.

6. Evaluate new technologies to identify opportunities for significant cost savings or improvements in mission effectiveness.

GOAL # 5

Apply Corporate Information Management to Integrate Defense Enterprise-wide operations.

Objective: Integrate technical programs, particularly cross functionally, so that barriers to data sharing, transfer and interoperability are identified and removed.

Objective: Integrate systems plans both functionally and technically, providing an enterprise-wide perspective on functional operations and technical systems.

To meet these objectives we will:

1. Develop policies and oversee performance of technical integration activities as they support CIM and Enterprise Integration.

2. Assess Enterprise Integration policies, plans, programs and performance and identify areas for improvement as needed.

3. Ensure that policies and programs across process reengineering, data, information systems, and infrastructure are integrated and compatible.

4. Develop and implement a coordinated CIM strategic and operational planning process.

GOAL # 6

Establish CIM policies and management structures.

Objective: Ensure that the Corporate-wide information management structures are put in place and can support the DoD's information needs for the 21st century.

Objective: Establish CIM policy to guide CIM implementation by communicating and clarifying goals, objectives, methods and procedures.

To meet these objectives we will:

1. Develop and maintain policies for information systems, data, process reengineering, and infrastructure.

2. Establish the management structures and processes to implement CIM on a self-sustaining basis.

3. Establish necessary management structures to involve the senior DoD leadership with providing strategic guidance and priorities to the CIM and EI initiatives.

4. Establish mechanisms to identify and prioritize CIM programs and alternatives for resource investments.

5. Establish measures for CIM implementation progress and evaluate actual versus planned progress.

ENTERPRISE INTEGRATION

Implementing Strategy

April 1994
Center for Integration & Interoperability
Defense Information Systems Agency
U.S. Department of Defense

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1.0 EXECUTIVE SUMMARY

The Corporate Information Management (CIM) initiative, embodied in policies and programs, implementation guidance, and supporting resources, was established by DoD to help functional managers improve their processes, data, and information systems. It consists of four major thrusts: simplify and streamline DoD processes through improved decisionmaking using Business Process Re-engineering; share standard data provided through DoD databases; use common information systems; and implement a Defense Information Infrastructure serving as a common utility.

New challenges at home and abroad require the Department of Defense to re-interpret the requirements inherent in its fundamental mission to "provide for the common defense" of the nation. Increasingly limited DoD assets and capabilities must be used effectively to respond in non-traditional ways to unique global situations and changing national priorities. The current organizational focus on narrow concerns must be changed, so that DoD organizations and personnel increasingly concentrate their efforts on creating enterprise wide solutions and delivering quality services to end users. EI is a key strategy for achieving mission success in the future.

Enterprise Integration is the CIM key implementing strategy for meeting the formidable new challenges DoD faces as it moves toward the 21st century. From another perspective, EI can be seen as both the vision of the integrated enterprise that the Department of Defense must become if it is to continue to effectively and efficiently fulfill its mission and the implementing processes for realizing that vision. The common thread that connects each of these different characterizations of EI is the fact that a changing set of operational practices both in functional areas and in information management are critical to more effective warfighting and an efficient Defense Enterprise.

EI allows the Department of Defense to optimize the use of information as a strategic resource to: manage more effectively; bridge functional and technical boundaries within DoD; forge closer ties with other Federal agencies, industry, allies, and coalition partners; and to increase flexibility and agility. EI will enable Defense leaders to bring all available capabilities to bear successfully on every assigned mission, to the benefit of the American people and the world community.

The key words in the EI vision are "integration" used in its broadest sense and "implementation" used in a practical sense. A fully "integrated enterprise" requires a clearly defined set of shared Departmental missions, goals, objectives, and measures of performance. The strategies, programs, and activities required to achieve corporate vision, goals, and measures of performance need to be executed by flexible organizations that draw on a common "pool" of core competencies and focus resources as needed to satisfy the specific requirements of each operational mission. Behind the warfighting processes of the

enterprise, a simplified and common set of infrastructure support services (e.g., purchasing or personnel) need to efficiently meet routine requirements and be ready to be mobilized to meet contingencies. Implementation means pulling all the pieces together with the existing technologies and solutions currently in hand. It means rapid movement toward the principles laid out by CIM policy.

Within an integrated enterprise, a fully integrated set of information systems, based on an open systems architecture, use a common information infrastructure that provides shared data, processing, and communications in support of all users' applications. Also, in an integrated enterprise organizations share, where feasible, integrated physical resources (e.g., facilities, equipment, materiel) designed for flexibility in support of improved business operations.

The processes involved in making an integrated enterprise a reality across DoD are many and complex, and they reach into all aspects of the Department. But the essence of these processes can be distilled into two essential ingredients: Corporate Information Management (CIM), and corporate understanding and commitment to change within the DoD. CIM provides the overarching policy for functional (i.e., "business") process re-engineering, standard data, common information systems, and a standards-based infrastructure necessary to achieve a totally integrated enterprise. While the these goals are technically challenging, corporate understanding and commitment to the implementing processes of Enterprise Integration may be far more difficult to achieve. The purpose of this paper is to describe the essence of Enterprise Integration and the tactical strategy required to implement the actions that can achieve the necessary and required future state for DoD.

2.0 INTRODUCTION

The fundamental Department of Defense mission is to "provide for the common defense" of the nation. This enduring mission is being re-interpreted from the cold war era to meet the challenges of the 1990's and the 21st Century. The end of the cold war means that the United States faces a more uncertain world situation and must be capable of responding in non-traditional ways to new opportunities for achieving peace and democracy, economic security, and protection of the environment. At home, changing national priorities require a new focus on competitiveness, jobs, health, community, education, and the national infrastructure. DoD will be expected to contribute to the national agenda, including the "reinvention" of the Federal Government itself.

With an increasingly constrained Defense budget, the DoD has had to match more carefully its capabilities and resources to the new global situation. Obviously, it is imperative that this process not result in a "hollow force." The Department of Defense must maintain its preparedness to safeguard our national interests in the changing world. Accordingly, the DoD must become more efficient, more responsive, and more effective; it must be able to deliver higher quality products and services to its constituency at a lower cost. Also, DoD must be prepared to deliver highly customized responses to increasingly unique world-wide contingencies. One key to meeting these challenges and achieving the defense mission is through Enterprise Integration.

EI is a tactical strategy and an implementing process. It is a new way of using information as a strategic asset to manage DoD far more effectively and efficiently. It bridges functional and technical boundaries in DoD and with industry, allies, and coalition partners to promote communication, increase flexibility, and avoid waste and duplication. This allows Defense leaders to bring all available capabilities to bear successfully and efficiently on every assigned mission.

Corporate Information Management (CIM) is one essential element needed to manage change. CIM provides the overarching policy, implementation guidance, and supporting resources leading to the necessary DoD Enterprise Model, Business Process Re-engineering tools, shared corporate data, common systems, and standards-based infrastructure. The other essential element for managing change is that of total corporate understanding of and commitment to the EI processes. Neither element can stand alone. Both are needed to make the vision of an integrated enterprise a reality across DoD.

2.1 *Vision of the Future Defense Enterprise*

In the not too distant future, the United States Defense posture will be quite different from the present as described by the following vision for DoD. The vision will impact missions, force structure, physical assets, financial and human resources. The following scenario traces the impact of that vision.

New Missions. *The United States faces new threats and opportunities abroad. U.S. forces are engaged, both multilaterally and unilaterally, in a wide spectrum of assigned missions ranging from peacekeeping and humanitarian assistance, to resolution of regional conflicts. In addition to its traditional military missions, the Department is undertaking activities to strengthen democracy, promote economic security, prevent the proliferation of weapons of mass destruction, and assist other elements of the U.S. Government in meeting national emergencies and achieving national priorities.*

Continued Military Superiority As DoD Downsizes. *The Department has been downsized from its late 1980s' posture, yet, maintains its military superiority through a combination of better intelligence, sophisticated joint command and control, smart weapons, highly motivated and trained personnel, and the application of information management to all DoD activities. Commanders can exploit a total, integrated, "strategic to tactical" flow of information from airborne, shipborne, and ground-based sensors, units, and intelligence assets to conduct joint and combined operations.*

Sustaining Base/Theater Integration. *The sustaining base has been integrated seamlessly with the Theater to deliver the right mix of assets and capabilities when and where they are needed by the Combatant Commander to achieve the assigned mission.*

Interagency/Ally/Partner Integration. *The Department has strengthened its partnerships with other Government agencies to implement Presidential priorities by coordinating policy and focusing available Government and private resources on national and international problems. Robust information links over a national "information highway" enable all Government agencies to work together for planning, routine activities, and emergency responses.*

Industrial Base Integration. *The military industrial base has been fully integrated with the commercial base by removing unnecessary bureaucratic barriers and providing electronic commerce/electronic data interchange (EC/EDI) capabilities and Continuous Acquisition and Life Cycle Support (CALS) linkages to industry/manufacturing. The Department can increasingly obtain and use standard commercial products and services, at lower cost to the American taxpayer. DoD is transferring advanced technologies to US Industry, and pursuing dual use projects, so U.S. industry can be more competitive in the global marketplace, and can create more and better jobs for American workers.*

"Empowered" Culture. *The DoD culture and values have changed to give people greater responsibility and capacity to improve their work. New job descriptions, skill training, and rewards imbed the leadership's objectives in the behavior of organizations, teams, and individuals. People are "empowered" to contribute to their country, grow in their jobs, and lead more productive, healthy, and satisfying lives.*

Business Process Re-engineering. *All Department functions and organizations have been re-engineered, improved, and integrated while being supported by modernized, standards-based information systems which provide "end-to-end" flows of information and decision support. These systems are based on full-spectrum, shared, reliable, and secure information services, accessible to all users at affordable costs.*

To realize the DoD integrated enterprise vision - to make it a reality - the functional and technical barriers that currently impair the efficiency and effectiveness of the Department need to be reduced or eliminated and DoD functions, data, and systems need to be linked so that the full power of the DoD can be marshaled to meet its new challenges.

2.2 *What does it mean to Integrate the Enterprise?*

Enterprise Integration is sometimes thought to embody only the functional and technical integration of an organization's information systems. But total Enterprise Integration is not limited to the alignment of an organization's information resources. Rather it comprises: shared strategic direction for the organization itself, consistently deployed at all levels; the integration of both internal functional organizations and external partners and suppliers; the integration of "end-to-end" processes that cross functional and organizational boundaries; the establishment of a cooperative culture throughout the organization and the empowerment of people; integration of financial assets and human resources; the standardization of data and the sharing of corporate information through a common information infrastructure; and the integration of an organization's physical assets to ensure a flexible and adaptive physical infrastructure. The following sections review each facet of a fully integrated enterprise:

***Integrated Planning and Direction**: An integrated enterprise develops and maintains consistent values, missions, visions, goals and objectives, measures of performance, and programs at all levels. Investment decisions are based on a common functional enterprise model and strategic direction shared by all elements of the enterprise. Business unit objectives are integrated with partner and supplier objectives in order to maximize "end-to-end" value chain benefits. Improvements are harmonized to optimize impacts, and scarce investment resources are prioritized against the enterprise objectives. Integrated financial management ensures shared resources that are programmed and budgeted looking across functional lines. It also achieves economies of scale, recovery of costs, and continuity for process improvement funding within and across functions. Cross-functional management solutions to enterprise wide issues are identified, planned and programmed.*

***Integrated Organizations**: Both internal organizations (e.g., functional departments) and external organizations (e.g., trading partners and customers) are integrated within the "extended enterprise." Competencies and resources are leveraged across functional and organizational boundaries. Business unit organizations are flexible enough to be part of one or more virtual enterprise organizations. Core competencies are recognized to be independent of functional organizations and leveraged across services and product lines. Business relationships and alliances are formed quickly and effectively to achieve corporate objectives which are situation dependent and highly variable. Transactions between partners and suppliers are optimized to add maximum value. Teaming brings complimentary skills and resources to bear on missions from wherever they are available.*

***Integrated Processes**: One of the most important aspects of an integrated enterprise is the integration of business processes across varying functions. Traditional functional organizations tend to focus on narrow concerns rather than concentrating their efforts on creating enterprise-wide solutions and delivering quality services to end-users. Industry is rapidly moving to a "horizontal" process orientation that capitalizes on core competencies in functional areas. In this model, "vertical" functions such as personnel, finance, materiel, and information management can be linked together into total value chains. Business Process Re-engineering is applied routinely throughout the DoD. Current baselines are assessed for performance and resource use. Benchmarks are identified to determine "best" practices in Industry and Government. Based on these assessments, and the goals of the leadership, processes are simplified and streamlined to the greatest extent possible. Non-value added activities are eliminated. Focus is placed on satisfying the customer's needs. The right products are supplied at the right place and time to help achieve the assigned mission. Parallel processes and concurrent activities are introduced to speed cycle times. Processes are designed to use the best available technology and a shared information environment. Standards are established for processes including metrics for quality, time, flexibility, customer satisfaction, and cost. Feedback for measuring performance is "built-in" to processes. Continual cross-functional improvements are made to processes with periodic quantum leap innovations based on "paradigm shifts."*

***Integrated Human Resources**: People are the most important resource of any enterprise. They apply their knowledge and skills to manage and perform processes within and between functional activities. In an integrated enterprise, a cooperative culture exists between all levels of the organization and between all functional areas.*

Emphasis is placed on team building. Management motivates people by rewarding positive behavior that aligns with enterprise direction. Processes are managed and executed by cross-functional, multi-disciplinary teams such as an Integrated Product Team, or a matrix team, or a Joint Task Force. Efficient and effective person-to-person communication is facilitated by an open environment that encourages "two-way" communications vertically and horizontally across the enterprise. Continual education and training is used to improve personal performance and to enrich job content. Non-traditional "flat" organization structures facilitate smaller distributed work groups oriented around performance of complete processes. Teams and individuals are empowered to innovate and improve their work supported by sophisticated information technologies, like multi-media conferencing and "groupware". Process improvement methods and practices are imbedded in the enterprise through changes to culture, new job descriptions, new performance measurement systems, and rewards for achieving Defense objectives.

Integrated Financial Resources: *Integrated financial information is essential for managing the DoD, ensuring proper external oversight, and satisfying statutory requirements. In the integrated enterprise, financial policies, practices, and procedures are standardized, and are supported by shared, standard data, and common information systems. Financial information is timely and accurate, and is made available to all potential users, subject to the constraints of an organization's right to control access to privileged information, national security, and respect for the personal financial privacy of the individual. Simply put, this means that responsible managers have direct access to the financial information they need to do their jobs. There is an integration of finance and other functions, where appropriate, so that duplication of reporting is avoided, the best "source" data is used, and managers can obtain a total view of the resource used to satisfy their mission and tasks. Quality, cost effective, integrated financial services are made available, when and where needed, to all DoD customers and users.*

Integrated Information and Systems: *In the integrated enterprise, information is managed as an corporate asset so managers and workers can share a complete, consistent, accurate, and timely view of the enterprise. A rigorous and unambiguous terminology is established through semantic data modeling and data standards. Focus is placed on the capture and effective use of enterprise knowledge as the strategic resource in the Information Age. Information systems provide an important enabling technology for improving decision making and process performance. Unfortunately, many existing systems were put in place without an overall integration strategy and were designed to automate a narrowly defined function rather than an "end-to-end" or complete process. Systems are designed according to an open architecture that allows for both extensibility and flexibility, and rapid interconnection with other systems to accomplish a specific task. A common information infrastructure supporting all applications is shared among all users. The common infrastructure can be extended to include customers and partners (e.g., other Government agencies, allies) to support a global view of DoD's missions and interfaces. The information content of business transactions is standardized to facilitate electronic data interchange for both business and technical data. The quality of data is continually monitored and controlled, ensuring that the right data is provided to the right person at the right time. The traditional paper-oriented environment is replaced with a more robust multi-media electronic-oriented information environment that recognizes the value of sharing and reuse of information within the enterprise and with other organizations. Duplication in the current baseline of information systems is eliminated rapidly and current legacy information systems transition smoothly to the integrated environment through encapsulation or conversion.*

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Integrated Physical Assets: *The final aspect of the enterprise is its physical assets that include facilities, equipment, and material. Facilities are designed for the logical flow of information and materials and are adaptive to changes in processes and product mix. Field, manufacturing, and test equipment is flexible with minimal delay and cost for changes. Materiel handling is flexible and integrated with the information system. Material flow is managed to facilitate just-in-time inventory control. The investment decision model for equipment and facilities considers the value of quality, time, and flexibility. Weapons and other end-items have standard interfaces with information systems so that they can be monitored, maintained, and controlled.*

Enterprise Integration is a systematic implementing process for removing functional, managerial and technical barriers within an organization, and leveraging all available capabilities to achieve an organization's objectives.

Enterprise Integration provides for the establishment of end-to-end managerial and functional processes, shared data, and common or interoperable information systems that result in the highest degree of mission effectiveness and resource efficiency.

But Enterprise Integration also encourages a broader concept of the Enterprise; indeed, it underscores the importance of a "global view." By establishing functional integration and technical interoperability with other US Government agencies and the private sector, the DoD can leverage the Enterprise Integration process to achieve even greater efficiencies and national-level effectiveness. For example, it is easy to recognize significant functional intersections between the Veteran's Administration and Health and Human Services with DoD's Human Resources functional area. Similarly, there are obvious opportunities for data standardization, information interchange, and resource sharing between the General Services Administration, the Federal Trade Commission, the Department of Commerce, and private sector contractors with DoD's Materiel Management and Procurement functional areas. Figure 1 shows the end-to-end processes that cross DoD functional areas and link with external agencies and the private sector.

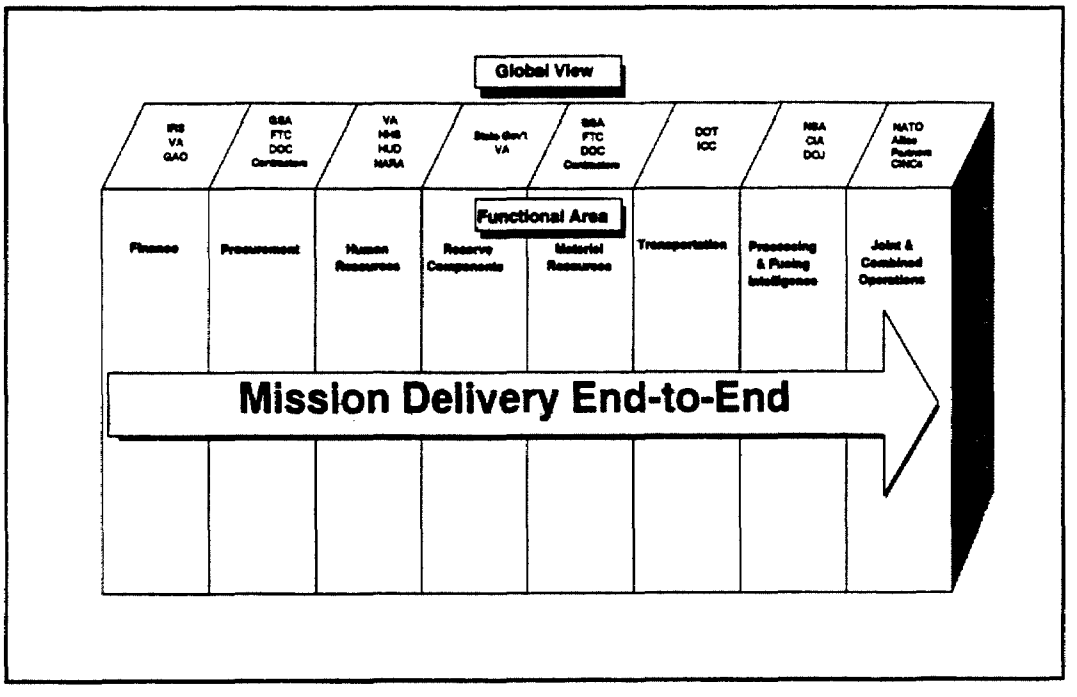

Figure 1. Mission Delivery End-to-End

As an organization becomes more integrated, its various elements evolve from narrow concerns to being highly interdependent, coordinated, and synergistic. Table 1, depicts the stages these elements go through during the EI implementing process.

Enterprise Elements	Current Situation	NEAR TERM TRANSITION	Integrated Enterprise	Enablers	Implementation
A. Mission Objectives	Largely Independent	Interdependent Within DoD	Interdependent Within DoD & With Other Government Agencies	Enterprise Modeling and Strategic Planning	Develop EI Strategy & Plans
B. Processes	Functionally-oriented	Critical cross-functional links	Cross-functional, Enterprise-wide Processes	Business Process Re-engineering	Conduct BPR from Enterprise Perspective
C. Organization	Hierarchial	Mixed Hierarchical & Networked	Horizontal/Networked	Organizational Analysis	Link Organizations
D. Human Resources	Individual & Non-Participating	Individual and Team	Team, Partnership, Alliance	Human Empowerment	Change Management; Improve Culture Re-align Jobs & Reward Systems
E. Financial Resources	Inconsistent, Non-standard, Not Integrated with other Functions	Increased Accuracy, Standard Systems, Initial Integration, Cost Visibility	High Quality, Full Access, Standard Practices/Data/Systems, Integrated with other Functions	Financial Reengineering, Systems Migration, Data Standardization	CFO 5 Year Plan, DFAS Plan
F. Information	Non-standard, inaccessible, out-dated, insecure	Initial standards and cross-functional data	Shared, standard, accessible, accurate, timely, secure	Data Standards and Data Administration	Migrate Data & Implement, Shared, Standard Data Bases
G. Information Systems	Stand-alone/stovepipe	Interfaced	Common, "Open", Integrated	Architecture and Standards	Migrate Information Systems
H. Physical Assets	Rigid, Expedited	Hybrid	Flexible, cost effective, just-in-time	Infrastructure Initiatives	Prototype & Evolve the DII

Table 1. ENTERPRISE INTEGRATION ELEMENTS

3.0 THE ENTERPRISE INTEGRATION CHALLENGE

We sketched a vision of the future integrated Defense Enterprise and have outlined the different elements and attributes of that vision. But Enterprise Integration doesn't happen automatically. It can only be achieved through committed leadership and a team of mobilized and empowered people with new attitudes towards change and their day-to-day tasks. Moreover, the current barriers to EI must be removed, and tools and resources must be provided to make EI happen. How do we begin to fashion this environment for change? First, it is necessary to know the key factors that are critical to the success of the endeavor - the "critical success factors." Second, it is necessary to have a more detailed idea of what strategies to take to achieve the EI goal.

3.1 Critical Success Factors for Enterprise Integration

Communicate EI. Everyone in the Defense community needs to be aware of the pressing need for EI, necessitated by the downsizing of the Department. The alternatives are stark: either achieve a dramatically more effective and efficient DoD or loose real capability to prevent and win wars. Each individual in DoD, as well as its contractors and stakeholders, needs to help remove functional and technical barriers that prevent the Department from bringing all its available capabilities to bear on its assigned missions. This perspective needs to be shared and then communicated by the leadership of the Department.

Lead EI. Defense managers and military commanders must lead the way to EI by their own example and commitment. They need to show that a non-parochial, enterprise approach is the strategic answer for the 1990s. Conversely, all plans for change need to be aligned with the leadership's goals and measures of success to make the compelling case for change that will engage the leadership. Leaders must empower people across DoD by removing barriers that impede EI, and by promoting the enablers of change: new attitudes, streamlined procedures, tools and techniques for improvement, rewards for excellence, and necessary resources.

Implement EI. Change requires a systematic, disciplined approach that is grounded in sound principles, tools, and techniques: the infrastructure for EI. The Department needs to establish a total "life-cycle" methodology that addresses improved business methods, integration techniques, processes, data, and information systems. This life-cycle needs to be supported by effective and low-overhead management structures that help functional and technical organizations coordinate and integrate changes across the Department at all levels. Finally, specific tools and techniques need to be made available for integrated, end-to-end support of the new EI processes.

In short, what is needed is Communication, Leadership, and Effective Execution!

3.2 DoD Enterprise Integration Strategy

The DoD has established a set of near- and long-term strategies for Defense Enterprise Integration. These strategies draw on the lessons learned in the private sector and the successes already observed in the DoD. Near-term strategies embody tasks and objectives that need to be initiated and achieved within the next three years to institutionalize the EI process across DoD, and achieve immediate improvements in operations and support activities. Long-term strategies map out fundamental changes to how DoD conducts its business. These strategies are reinforced through specific goals and measures of performance.

Enterprise Integration will be achieved through the on-going Corporate Information Management initiative that was started several years ago to help functional managers improve their processes, data, and systems. Process improvements are difficult to implement in an environment with so many independent supporting information systems. The Department stresses a parallel path for business process re-engineering and technology enhancements. It makes sense to simplify the systems first, while gathering an initial baseline on the over-all functional process. This will jump-start the business re-engineering processes by reducing the number of information systems into a few that support the prime functions for the organization.

3.2.1 Near-Term Enterprise Integration Strategies

The near-term EI strategies are aimed at jump-starting the EI process in order to get it into motion as quickly as possible and imbed it into the fabric of the Department. They also establish the information management foundation for further progress. The near-term strategies are described below.

Establish Senior DoD Executive Ownership for EI. As EI frequently requires significant decisions that lead ultimately to cultural and institutional changes, it is imperative that EI efforts be led from the highest levels of the organization. The offices of the SECDEF and DEPSECDEF should be actively involved in all major aspects of EI for DoD, to establish the goals and objectives for EI, and effectively communicate these goals to the functional proponents. This process commenced with the DEPSECDEF memo of 13 Oct 93 on accelerated selection of migration systems. It is evolving through the chartering of an Enterprise Integration (EI) Executive Board and an Enterprise Integration (EI) Corporate Management Council. Responsibilities of this Board and Council are described on page 19.

Use EI to Build-On Bottom-Up-Review (BUR) Initiatives and Support the Defense Performance Review Process. CIM and Enterprise Integration are, fundamentally, about "reinventing" DoD. CIM policy and EI implementing processes build on the efforts of the Bottom-Up-Review decisions and the continuing initiatives of the Defense Performance Review process. The CIM goals and EI plans provide achievable

milestones, valid cost-avoidances, and overall enhanced DoD effectiveness through a disciplined, systematic method. The central mission of CIM and EI to help the Department re-engineer its operations and evolve to become an integrated enterprise should be broadly communicated throughout DoD. CIM policies, methods, tools, and procedures can help implement BUR decisions and other strategic decisions, so that a consistent set of improvement initiatives drive DoD toward a shared leadership vision for the future.

Centralize Responsibility for EI Program Implementation in a Single Organization. In order to achieve central responsibility and accountability for Enterprise Integration across DoD, CFI&I will be re-named the Defense Center for Enterprise Integration in the Defense Information Systems Agency (DISA). This staff will continue to develop and maintain implementation plans as mentioned in their Integration Strategies, ensure efforts are executed in accordance with best IM practices and common solutions are used, and remove barriers to EI as necessary. Additionally, the EI staff will frame issues for decision by the corporate senior leadership, and communicate status frequently to all involved activities by supporting the EI Executive Board and EI Corporate Management Council. Programmatic and policy direction will be provided by the ASD (C^3I).

Establish "Standard" Information Systems Quickly. The Department needs to establish a common baseline of non-duplicative, standard information systems as a basis for functional improvement. Interim standards for a "critical core" of data entities should be approved, and new Automated Information Systems (AIS) not yet past Milestone II should be required to meet these standards. Migration system planning should be resourced and brought to a close in FY 94, and the selected migration systems implemented within three years. When the migration systems are standardized throughout the DoD, legacy systems will be "shut down" to achieve savings from eliminating duplication. As this standard baseline is being implemented, target system planning, architecture, and development will begin, to accelerate business process improvements.

Continue Business Process Re-engineering. In parallel with the migration to a common, standard baseline, functional managers should continue progress on the productivity improvements identified by the various Defense Management Review Decisions (DMRD) -- $52 billion according to the Odeen report -- and accelerate their Business Process Re-engineering efforts to identify additional improvements. These should be accommodated in migration systems, where possible. EI should serve as a basis for revising any affected DMRDs and for generating new decision opportunities through the Program Budget Decision (PBD) and Program Objective Memorandum (POM) process. Effective re-engineering also requires "change management" to re-train workers and overcome cultural barriers to change, and motivate people

to use new technologies and systems. Financial management and human resource issues must be addressed and supported by DoD leadership.

Build on Early Successes. The Department should build upon DoD successes and the gathering momentum for CIM. It should select the best aspects of solidly supported concepts and programs (e.g., C4I For The Warrior and Global Command and Control System, Cost Schedule Control System Criteria, Defense Civilian Personnel Data Systems (DCPDS), Continuous Acquisition and Logistics Support, etc.) to demonstrate the benefits that will accrue from EI.

Apply CALS and EC/EDI Integration "Model". As an example of these management principles applied to a functional area, the objectives of CALS and Electronic Commerce/Electronic Data Interchange (EC/EDI) could be accomplished through a DoD senior management team to manage the cross-functional elements of this process, with the PDUSD (A&T) as the primary focal point. The existing programs of CALS, EC/EDI and EI would be blended within the overall CIM Strategic Plan for A&T. A senior steering committee, including the Comptroller and ASD (C3I), as well as other key participants, would be formed to guide the integration of functions, data, information systems, and requirements for the Defense Information Infrastructure. This approach could be the "model" for integrating other top level Business Process Re-engineering EI initiatives.

3.2.2 Long-Term Strategies

In the long-term, total Defense Enterprise Integration will be achieved by fully implementing the Department's information management program. The strategies for accomplishing this goal are:

Institutionalize Business Process Re-engineering Across DoD. True Enterprise Integration requires a disciplined, systematic method for changing DoD operations. Business Process Re-engineering (BPR) is the total, end-to-end approach needed to change processes, organizations, human resources, information and information systems, and physical assets synchronously for optimum impact on DoD operations. This strategy applies BPR using the DoD Enterprise Model, end-to-end processes that focus on mission results, and corporate measures of performance to identify and plan an integrated program of change across the DoD.

Establish and Execute the DoD Enterprise Model. Managing Business Process Re-engineering within and across functions requires a total understanding of the defense business, from "end-to-end." The DoD Enterprise Model provides senior leadership a strategic view of defense activities and data so they can assess current performance and strategically plan improvements from a global end-to-end process

perspective. This strategy makes the DoD Enterprise Model a strategic planning tool used throughout the DoD.

Aggressively Implement Data Standards and Shared Databases. In the integrated enterprise commanders and managers must share a common view of activities. This strategy ensures consistency, quality, timeliness, availability, and security of shared, corporate data by implementing corporate databases using standard data elements as soon as possible.

Integrate Information Management Resources. Integrated processes across the enterprise require standard and interoperable information support. This strategy eliminates duplication in DoD's information systems, migrates them to a common baseline, and evolves them to open environments that support improved functional processes.

Establish an Integrated Technical Architecture Framework for IM. Technical integration is facilitated through a centrally managed architecture that guides and controls the direction of change. DoD's Technical Architecture Framework for Information Management (TAFIM) is the framework to identify key infrastructure intersections and assign responsibilities for managing technical integration. It helps ensure integration solutions reflect the developing policies and requirements of DoD, and are directed toward an open system environment and a shared Defense Information Infrastructure[1/] (DII) from a global view. Instituting a standards-based architecture based on the TAFIM and issuing approved technical guidelines to the developers and operators of the technical infrastructure is a near-term necessity.

Implement a Global Defense Information System and Infrastructure. The underlying computer and communications "platform" for DoD - its information infrastructure - needs to be re-engineered to provide cost-effective, reliable, available, high-quality, and secure information services when and where needed, world-wide. This strategy plans, assesses, and guides technical integration of the shared Defense Information Infrastructure (DII) between and among long-haul communication consolidation, data center consolidation, and base-level modernization activities acquiring IT components that enable technology integration as part of a total Defense Information System architecture.

1/ The DII encompasses information transfer and processing resources, including information and data storage, manipulation, retrieval, and display. More specifically, the DII is the shared or interconnected version of computers, communications, data, applications, security, people, training, and other support structure, serving the DoD's local and worldwide information needs. The DII (1) connects DoD mission support, command and control, and intelligence computers through voice, data imagery, video, and multimedia services, and (2) provides information processing and value-added services to subscribers over the Defense Information System Network (DISN) which is the DoD's consolidated worldwide enterprise level telecommunications infrastructure that provides the end-to-end information transfer network for supporting military operations. Unique user data, information, and user applications software are not considered part of the DII.

Manage Functional and Technical Baselines. The complexity and interdependence of these strategies require new tools for managing and integrating change. This strategy uses configuration management processes and procedures to ensure coordination of all EI actions.

Figure 2 depicts the CIM and EI elements, including the enterprise integration process and the "pillars" supporting change.

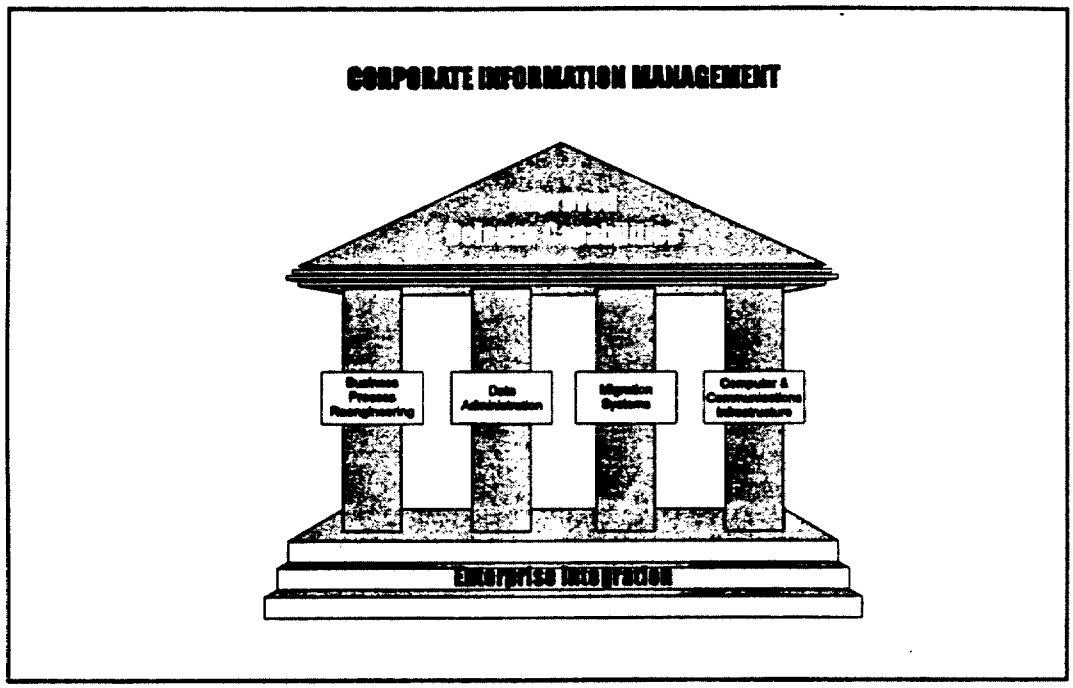

Figure 2. Strategic Vision for Enterprise Integration

3.3 Near-Term Objectives and Measures of Performance

Mr. Perry in his Memorandum of 13 October 1993, stated that "our near-term strategy requires selection of migration systems within six months, with follow-on DoD transition to the selected systems over three years. Complete data standardization within three years by simplifying data standardization procedures, reverse engineering data requirements in approved and proposed migration systems, and adopting standard data where previously established by individual functions and Components for DoD use wherever practical."

The following activities, many of which have been set in motion, will provide near-term achievements toward the strategic goals; these activities have quantifiable target measures of performance:

March '94	Select migration systems within six months.

September '94	All Functional Economic Analysis and Integration Decision Papers complete for migration systems. An estimate of between 20-40% of all DoD data could be shared data, therefore, in this period 20% of all DoD data should be identified and placed in shared data bases (e.g., using middleware). Twenty percent of the functional areas have completed their initial Business Process Improvement Programs and have initiated improvement implementation efforts.
March '95	All tactical data integration plans are complete. Twenty percent of functional areas are using standard data entities, shared databases, and DIS platforms aligned with (TAFIM).
September '95	Forty percent of all DoD data is on shared databases (middleware) and have completed their initial Business Improvement and Functional Economic Analysis. Sixty percent of data elements are standardized. All existing and new functional models are aligned with the DoD Enterprise Model.
March '96	Sixty percent of functional areas are using shared databases, are on OSE platforms (aligned with TAFIM), and are fully integrated with the functional areas.
September '96	All migration systems are implemented. All functional areas are using shared databases, all data elements are standardized, all Business Process Improvement and Functional Economic Analysis are complete. Sixty percent of the Defense Enterprise cross-functionally integrated. Twenty percent of global (external) organizations that "partner" with DoD are integrated into the "extended enterprise."
March '97	All functional areas use shared databases with standard data elements, are operating on OSE platforms (aligned with TAFIM), and are fully cross-integrated across the Defense Enterprise. Sixty percent of all global (external) organizations are integrated with DoD.

3.4 Management Approach for Enterprise Integration

In considering the future for Defense, it is important to note that the Enterprise Integration vision emphasizes significantly greater cooperation and coordination among the Services, and between DoD and its partners. This emphasis on cooperation and coordination will require significant changes to DoD's management practices.

Figure 3 shows how these targets achieve the CIM goals.

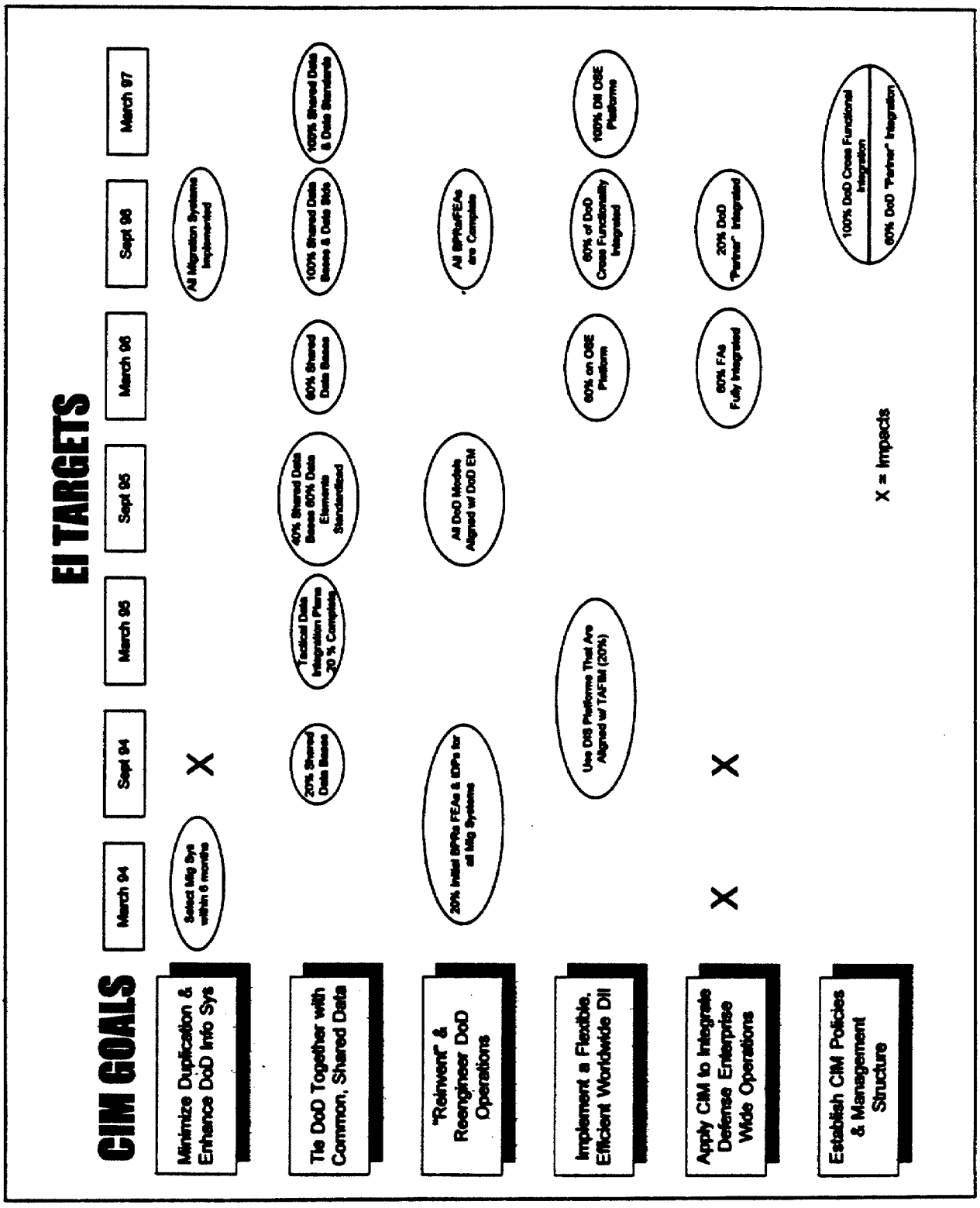

Figure 3. EI Targets Related to CIM Goals

4.0 MAKING IT ALL HAPPEN!

We have sketched the vision of the future Defense Enterprise and outlined the basic strategies and management approaches for converting that vision into reality. We have also described the characteristics of an integrated enterprise, and the critical success factors for achieving it. Now it is time to outline the actual mechanisms and specific management structure envisaged to make it happen.

4.1 DoD Enterprise Model

The linkage between the Enterprise perspective (the strategic view) and lower level functions is accomplished through the top-level Enterprise Model activities. The Enterprise model also represents the top level data requirements and leadership priorities for shared data in the form of strategic data entities. Figure 4 shows the top level activities for the DoD Enterprise:

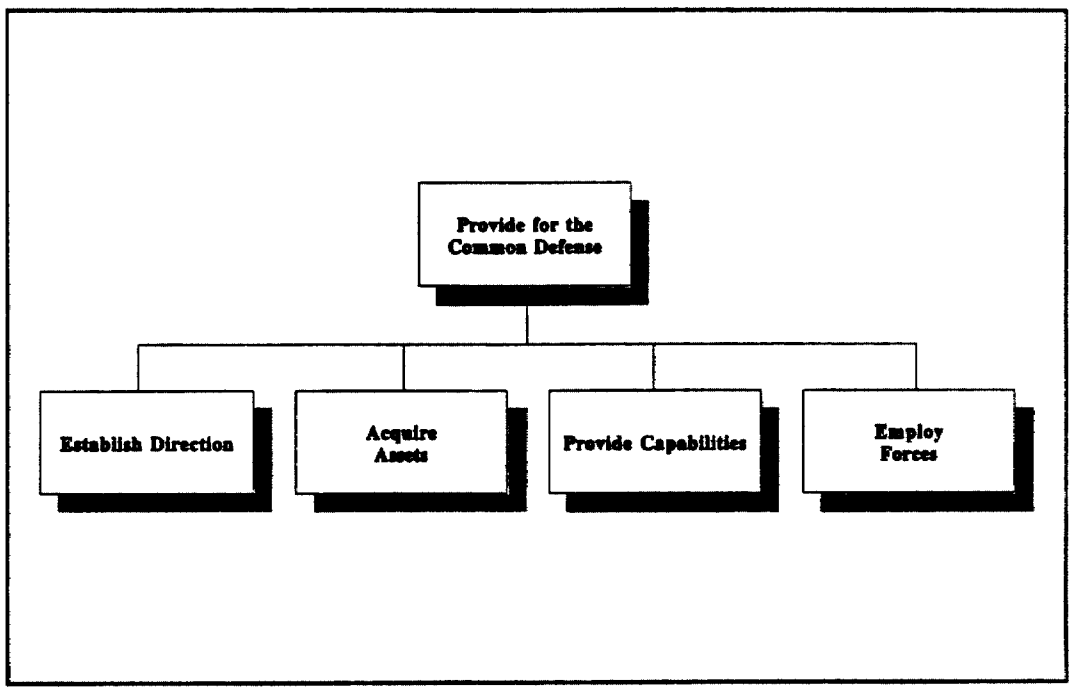

Figure 4. Enterprise Model Activities

The DoD Enterprise Model is the overarching description of all the activities and data within the Department of Defense. Each mission, function, and organization in DoD can "fit" into this framework to contribute to the common goals, objectives, and measures of performance established by Defense leaders. The DoD Enterprise Model is the means for senior leadership to effect cross-functional and cross-organizational integration.

4.2 Functional Management Process

Figure 5 depicts the Functional Management Process (FMP) for DoD. The DoD prescribes a three-phase FMP strategy for improving management of DoD operations and information. Phase 1 is the establishment of a functional architecture and a strategy for meeting functional requirements. Phase 2 is the establishment of baselines for processes, data, and information systems. This phase entails selecting information systems, which are then designated "migration systems," to support existing business processes. Phase 3 is the improvement of functions, data, and information systems. An Enterprise Integration Architecture helps to guide this process for different management, functional, and technical concerns, at all levels of the DoD. This Architecture includes the DoD Enterprise Activity and Data Models, and the TAFIM. Senior DoD leaders guide Business Process Re-engineering from a top level, total EI perspective to optimize the impact of improvements across the Department.

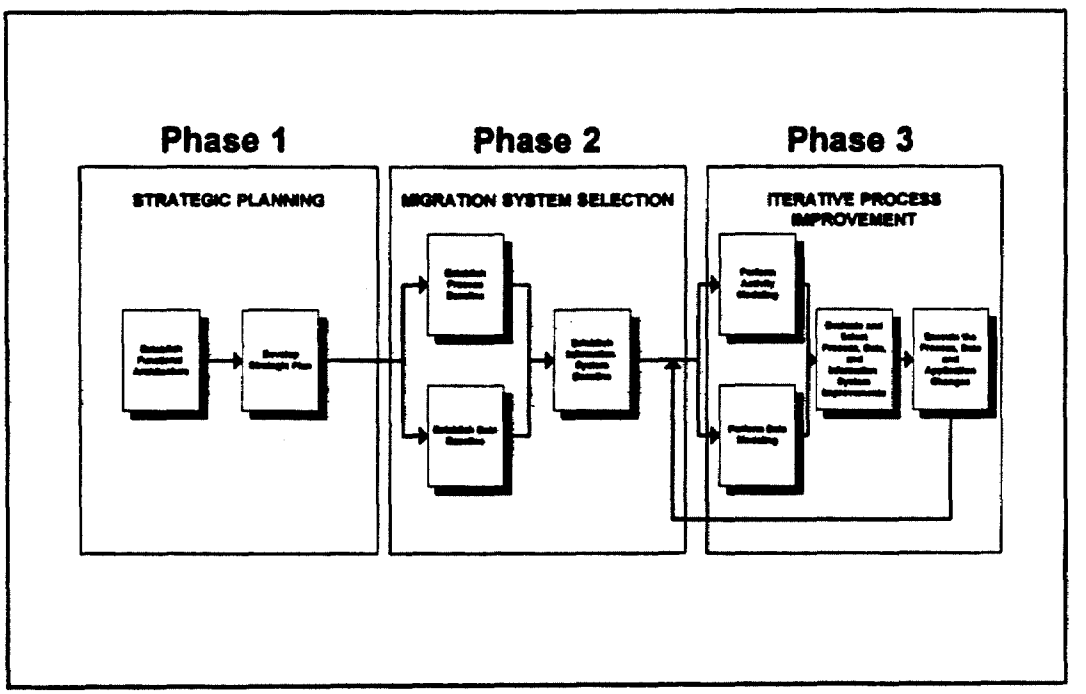

Figure 5. Functional Management Process (FMP) for DoD

4.3 The Cross-Functional Approach to the EI Process

Enterprise Integration is everyone's responsibility, from the Secretary of Defense to the individual defense worker. The process of EI has management, functional, and technical elements. The EI goal is "end-to-end" integration of DoD's processes across functions: the cross-functional viewpoint. But cross-functional integration can only be achieved if there is a corresponding technical integration of the underlying information systems.

Figure 6 depicts the integration management process to achieve this goal.

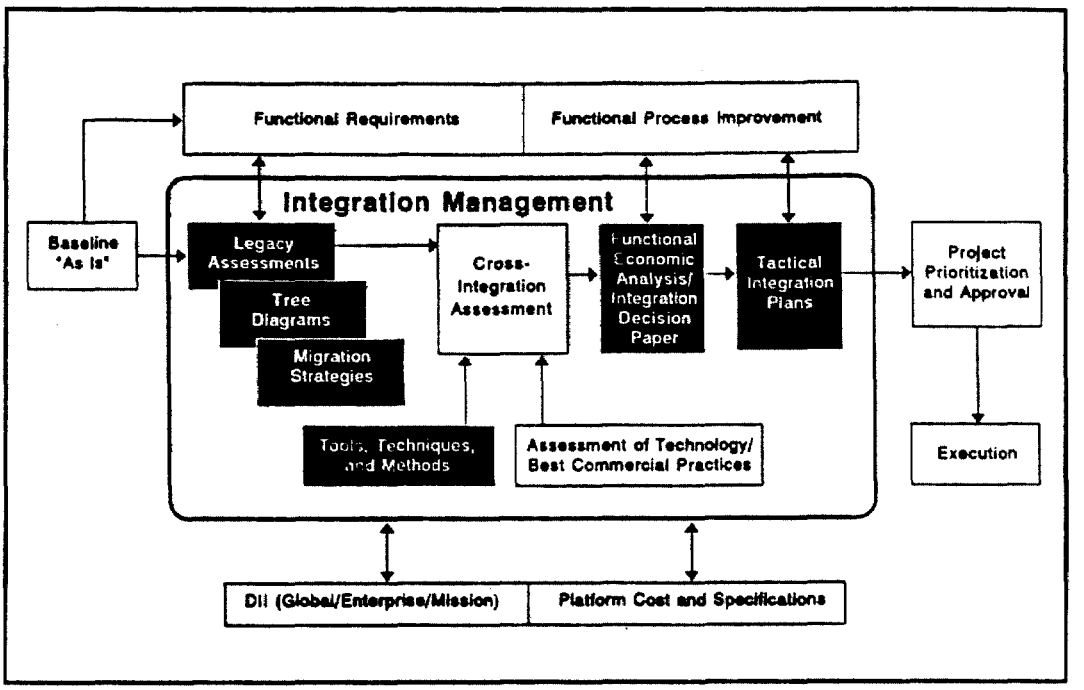

Figure 6. Integration Management Process and Outputs

While the Secretary of Defense, PSAs, JCS, and other functional managers have the major responsibility for functional integration, the responsibility for technical integration rests with the ASD (C3I) and the Director of the Defense Information Systems Agency.

4.3.1 Enterprise Level Integration

The Secretary of Defense is responsible for the functional integration of the Department within the context of the overall National Security Strategy, Public Law, and NCA/Congressional guidance. DoD is in the process of chartering a DoD Enterprise Integration (EI) Executive Board, chaired by the DEPSECDEF, and a subordinate DoD Enterprise Integration (EI) Corporate Management Council to provide forums for EI. The DoD Enterprise Integration (EI) Corporate Management Council identifies and resolves cross-functional issues. It will develop cross-functional solutions to enterprise issues arising out of the accelerated implementations of migration systems, data standards, and process improvements. EI implementation issues will encompass financial assets, human resources, process improvement, management and cultural impacts, and technical infrastructure solutions. At the Enterprise-level, the ASD (C3I) is responsible for ensuring the necessary technical integration of the Department's information resources to support functional integration. Accordingly, the ASD (C3I) develops an information management strategy, and corresponding information technology and systems policy and plans, within a framework of DoD functional processes,

ework of DoD functional processes, policy, and guidance. Enterprise Integrators are cross-functional ıs which resolve issues and plan common solutions. Figure 7 illustrates this functional-technical raction at the Enterprise-level.

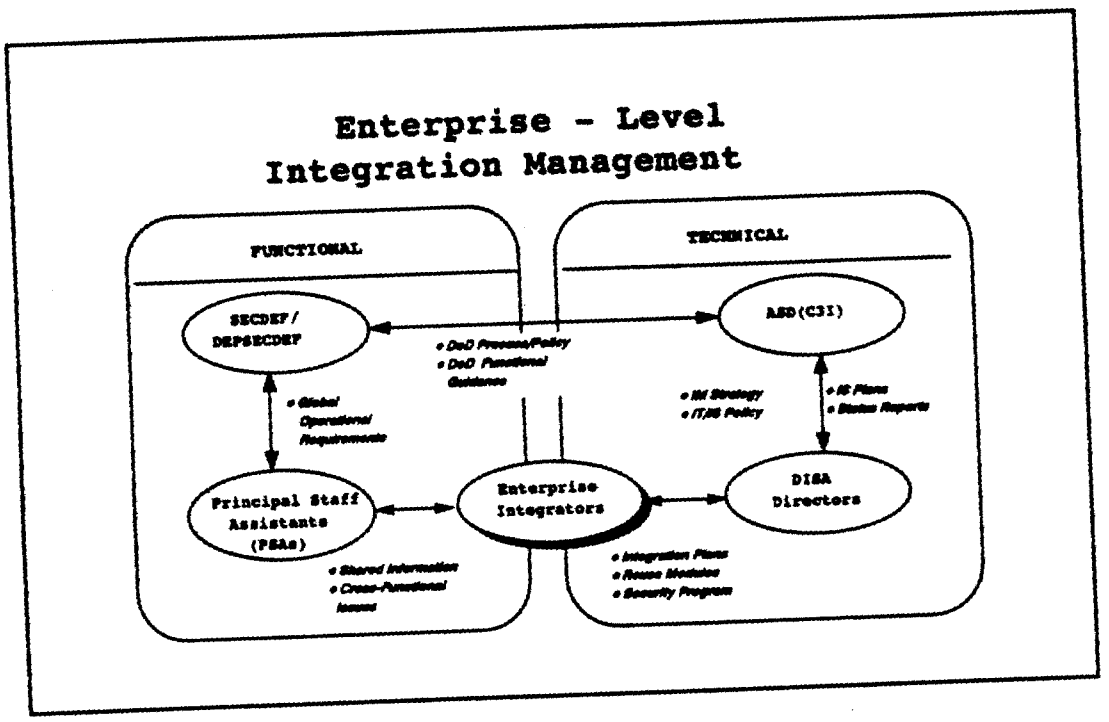

Figure 7. Enterprise Level

4.3.2 Mission-Level Integration

At the Mission-level, the PSAs have primary responsibility for the integration of their assigned functional area with other relevant functional areas, within the context of overall DoD Enterprise goals, objectives and measures defined by the SECDEF and DEPSECDEF. Technical integration at the Mission-level rests with the Director of DISA. Integration Managers are responsible for bridging between functional and technical concerns. Integration Managers are functional and technical teams used to bridge functional and technical issues and identify common solutions. Figure 8 depicts the integration responsibilities at the Mission-level.

4.3.3 Functional Area-Level Integration

The Functional Activity Program Managers are responsible for integrating their assigned functional activities with other relevant activities, within a context of broad functional area goals, objectives, and measures established by the PSAs. Various DISA Centers provide the necessary technical integration support to achieve Activity-level functional integration. Enterprise Integrators are used to coordinate the various

functional and technical integration activities. Figure 9 illustrates the interaction of functional and technical integration responsibilities at the Functional-level.

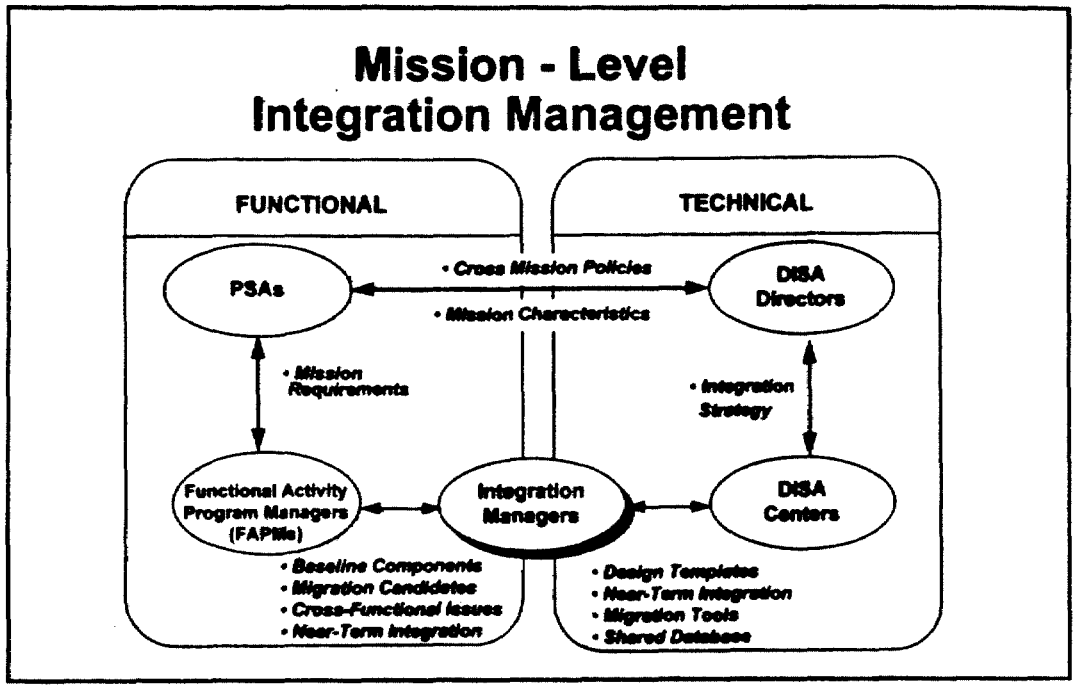

Figure 8. Mission Level

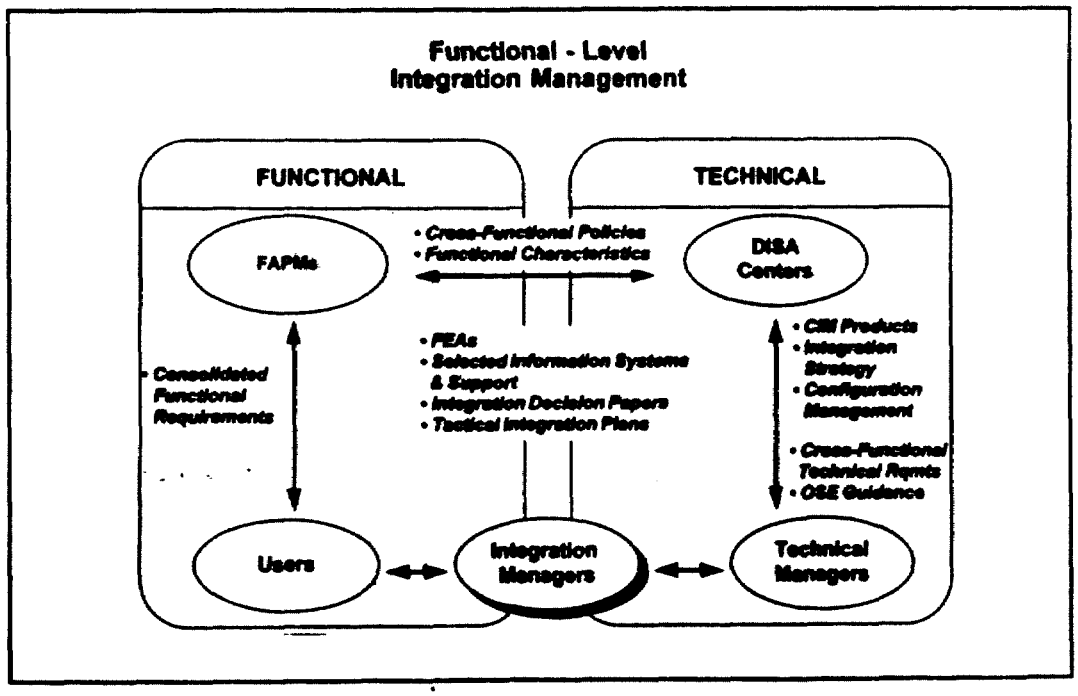

Figure 9. Functional Level

4.3.4 Functional Activity-Level Integration

At the Functional Activity-level, DoD user organizations are responsible for ensuring the integration of their assigned activities with standard DoD processes, data, and information systems. DISA Integration Managers perform a similar function on the technical side. Contractors, serving as Enterprise Integrators, are responsible for vigorously applying integration principles, methods, tools, and advising their DoD clients of functional and technical integration opportunities.

4.3.5 Customer-Oriented Account Organization

Figure 10 shows the CFI&I customer-oriented structure to provide the Principal Staff Assistants with an approach to help conduct BPRs, standardize data, plan for the migration of information systems, use DII services, and find cross-functional linkages and Enterprise solutions.

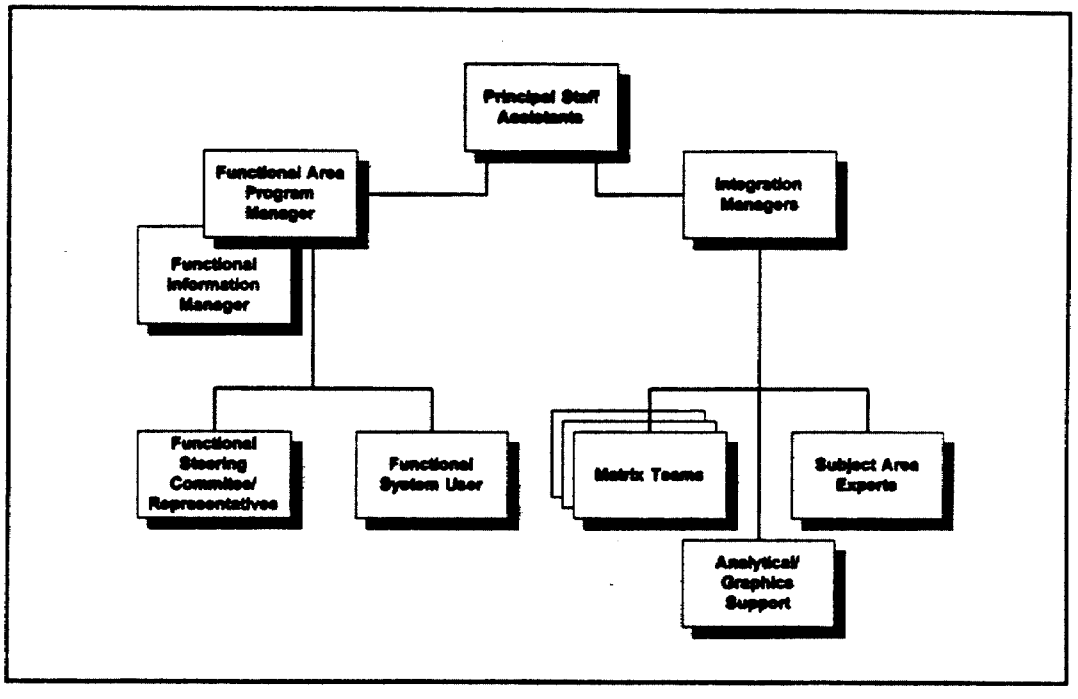

Figure 10. Customer-Oriented Account Organization for EI

5.0 CONCLUSION

The DoD has always been subject to change and evolution; however, the rate of change resulting from the end of the Cold War coupled with the accelerating change in technology has created the need for different management and operational approaches. As a result of these changes the DoD vision for the future includes downsized but technologically superior forces, new peacekeeping and humanitarian missions, an integrated military/commercial industrial base, global information operability, and re-engineered and integrated functions and organizations based on modernized, standards-based open information systems.

EI will support the DoD management orientation to migrate towards greater "jointness" and a "horizontal" focus. This will create more of a "mission-results" culture which will allow the blending of support functions and command and control to strengthen the C4I For The Warrior concept.

EI includes a very broad view of the Enterprise elements which must be integrated to achieve successful cross-functionality and process improvement. The elements include integrated objectives, organizations, financial and human resources, physical assets, processes, information, and information systems. The integration of processes, information, and information systems are key elements which help achieve effective and efficient cross-functional operations. This includes simplified processes based on common data and standardized business/operational transactions using computer based information systems as an enabling technology for improving decision making and process performance.

The framework for achieving EI is the DoD Enterprise Model which provides the means for describing how each mission, function, and organization "fit" in a common way and can operate cross-functionally. EI will require Integration Management from the top to the bottom of the DoD organization. The SECDEF and DEPSECDEF are responsible for Integration Management at the Enterprise-Level where cross-functional policy decisions will be made and provided to the Principal Staff Assistants for implementation using "Enterprise Integrators" are cross-functional teams used to bridge the functional and technical aspects of the policies. At the Mission-Level the PSA's will be responsible for Integration Management where mission requirements will be provided to Functional Activity Program Managers for implementation using the Integration Managers approach. This same approach will be used at the Functional-Level where consolidated functional requirements will be provided to Users.

In conclusion, EI will support the DoD management orientation to migrate toward greater cooperation/integration among the services and a focus on joint operations capability. This will lead to flexible, consistent, and standard information. EI will allow the "warfighter" to fully and effectively pursue his or her mission. EI will provide functionally integrated and truly interoperable and coordinated forces. These forces will be able to respond to any mission world-wide. EI will allow the Joint Task Force Commander to fully

integrate the warfighting functions and capabilities of the Service Components. This heightened level of functional integration will act as a force multiplier in an environment of reduced resources and downsized forces.